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Subject: Mean Constituents by Lift/Year

ATTACHMENT: CAD Volume and Disposal Assumptions.xls

ATTACHMENT: CAD Mean Constituents Estimate.pdf

The attached pdf file contains a summary of an analysis I did looking at the estimated mean concentration of Total PCB, Cu, Silt/Clay, and TOC under both a 3-lift and 5-lift scenario for the Upper Harbor CAD cell. That analysis was done using a straight average of the DMU constituent values within each lift and also, for PCBs, computing a DMU-volume weighted average (last column of table). The table also includes average values for the Lower Harbor CAD cell under a 2-lift scenario.

A caveat: My total volume numbers do not precisely match an estimate of volume Dave recently provided to me (28 July), but they do come close to the original estimate on the first tab of the attached spreadsheet (provided sometime earlier by Dave). Nonetheless, I think for the purposes of this analysis slight differences in volumes (Upper Harbor estimate 345,000 vs. 403,000) won't make a substantial difference.

The 5-lift and 3-lift non-weighted averages show similar ranges for the various constituents with the 5-lift scenario showing an intermediate PCB value of 889 in lift 2 that is not reflected in the 3-lift scenario (basically in the 5-lift scenario the DMUs of lift 2 contributing to this value get incorporated into lift 1 of the 3-lift scenario).

The PCB weighted average shows general agreement with the non-weighted approach, although lift-2 under both scenarios is somewhat higher in the weighted average calculation (5-lift; 889 vs. 1230: 3-lift; 281 vs. 435).

In general, I believe that this analysis supports a conclusion that modeling of the upper harbor can be done based on three composites. The analysis also suggests that use of a volume weighted average may not provide much additional discrimination. Therefore, I did not conduct that analysis for the other constituents.

I have attached the spreadsheet used to generate the pdf table if anyone wants to dig into the weeds.

In particular, Paul and Carlos should comment on whether they generally

concur or whether they think some different analysis of the data would be critical for model input and lift assumptions.

Tom

- CAD Volume and Disposal Assumptions.xls - CAD Mean Constituents Estimate.pdf